



Huawei USG6000V Virtual Service Gateway

Product Overview

The wide use of cloud computing technology speeds up the convergence of IT and CT technologies. Demands increase sharply on public and private cloud deployment, rapid service provisioning, on-demand service migration, and customized attack defense. Conventional hardware-based service gateways are gradually hard to meet the deployment requirements in the cloud network architecture.

Huawei USG6000V is a virtual (software-based) service gateway based on the network functions virtualization (NFV). It features high virtual resource usage because the virtualization technology allows a large number of tenants to concurrently use the resources. In addition, the USG6000V provides abundant virtualized gateway services, such as routing, VPN, firewall, load balancing, intrusion prevention, and antivirus services. It can be flexibly deployed to meet service requirements.

Huawei USG6000V series virtual service gateways apply to cloud data centers and provides one-stop gateway services for tenants. The high efficiency and multi-tenant feature of the product simplifies gateway deployment for a large number of tenants and reduces deployment costs. Additionally, the USG6000V is compatible with multiple mainstream virtualization platforms and provides abundant APIs, meeting the requirements of cloud data centers for rapid service provisioning and on-demand use of services.

Features

Abundant Gateway Service Features

- Fine-grained user bandwidth management ensures bandwidth resources for key services and preferential forwarding of such services based on applications and website categories.
- The USG6000V integrates routing, load balancing, VPN, next-generation firewall, and antivirus functions, simplifying O&M.

Efficient Computing Resource Use

- Only one engine (IAE) is used to detect applications and parse and process multiple services at the same time, guaranteeing concurrent processing of services for many tenants.
- The USG6000V improves service processing efficiency based on DPDK + SR-IOV technologies, Efficiently processing multiple services, such as routing and load balancing services.

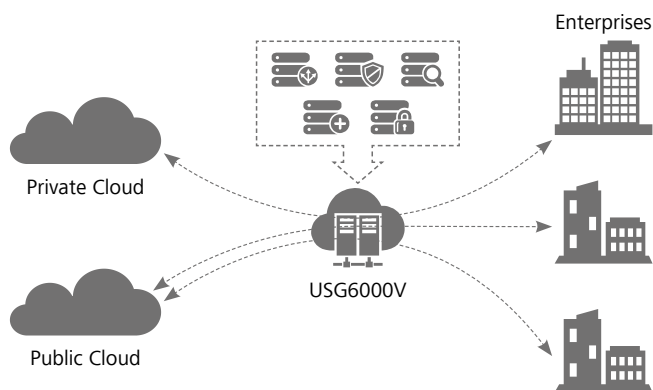
Service Load Balancing

- The USG6000V improves computing resource usage based on Layer-7 applications and Layer-4 intelligent load balancing.
- The USG6000V supports multiple types of load balancing algorithms, meeting diversified customer requirements.

NFV Architecture-based Openness and Compatibility

- The USG6000V supports mainstream virtualization platforms, including VMware ESXi, Linux KVM, and Huawei FusionSphere.
- The USG6000V can be managed using NBIs (such as NETCONF and RESTful NBIs) and the OpenStack platform for NFV interconnection.

Typical Application Scenario



- A USG6000V is deployed on the virtual network egress of cloud data center tenants. Virtualized features of service and system resources are deployed on the USG6000V, so that the USG6000V provides independent gateway services for each tenant.
- The high-performance product provides abundant features for a great number of tenants simultaneously. Each tenant can experience customized services.
- Load balancing algorithms provided in the load balancing feature help improve the computing resource usage of tenants.

Detailed Product Specifications

Model	USG6000V1	USG6000V2	USG6000V4	USG6000V8
VCPU	1	2	4	8
Forwarding capability (Gbps)	10	20	40	80
Maximum number of concurrent connections	500,000	2,000,000	4,000,000	8,000,000
New session rate	15,000	30,000	100,000	280,000
Maximum number of virtual systems	20	50	200	500
Resource requirement-core/CPU	1	2	4	8
Resource requirement-memory (GB)	2	4	8	12
Resource requirement-storage (minimum/maximum)	30 GB/2 TB	30 GB/2 TB	30 GB/2 TB	30 GB/2 TB
Maximum number of vNICs	2-10			
Resource requirement-physical port (recommended)	2 service ports, 1 management port, and 1 heartbeat port	2 service ports, 1 management port, and 1 heartbeat port	2 service ports, 1 management port, and 1 heartbeat port	2 service ports, 1 management port, and 1 heartbeat port
Condition for the preceding performance test	RH2288, V3, X86 series-3200MHz-1.8V-64bit-135000mW-Haswell EP Xeon E5-2667 v3-8Core-with heatsink			
Functions				
Integrated protection	Integrates traditional firewall, VPN, intrusion prevention, antivirus, bandwidth management, and anti-DdoS functions.			
Application identification and control	Identifies more than 6000 applications with the access control granularity to application functions, for example, distinguishing between WeChat text and voice. The USG6000V combines application identification with intrusion detection, antivirus, and data filtering, improving detection performance and accuracy.			
Intrusion prevention and web attack defense	Accurately detects and defends against vulnerability-specific attacks based on up-to-date threat information. The USG6000V can defend against web-specific attacks, including SQL injection and XSS attacks.			
Antivirus	Updates the antivirus signature database every day. The USG6000V can rapidly detect more than 5,000,000 types of viruses based on the signature database.			
Bandwidth management and QoS optimization	Provides per-user or per-IP bandwidth management based on application identification, ensuring network quality for key services and users. The management and control can be implemented by maximum bandwidth, guaranteed bandwidth, application-specific PBR, and changing the forwarding priority of application traffic.			
Load balancing	Supports Layer-7 service and link load balancing and fully uses computing resources based on abundant load balancing algorithms.			
Intelligent uplink selection	Supports service-specific PBR and intelligently selects the optimal link based on multiple types of load balancing algorithms (such as the bandwidth ratio and link health status) in multi-ISP scenarios.			
VPN encryption	Provides various reliable VPN features, such as IPSec VPN, L2TP VPN, MPLS VPN, and GRE.			
Anti-DDoS	Implements anti-DDoS to defense against over 10 types of DDoS attacks, such as SYN flood and UDP flood.			
User authentication	Supports multiple authentication methods, including local, RADIUS, HWTACACS, SecureID, AD, CA, LDAP, and Endpoint Security authentication.			
Security virtualization	Supports virtualization of multiple types of security services, including firewall, intrusion prevention, antivirus, and VPN services. Users can enjoy isolated and tailor-made management on one physical device.			
Intelligent management	Uses predefined templates for common attack defense scenarios to rapidly deploy security policies, reducing learning costs. The USG6000V can automatically evaluate risks in security policies and intelligently provides optimization suggestions. The USG6000V can detect policy conflicts and redundancy to identify redundant policies and policies that have not been used for a long time. This implementation effectively controls the policy quantity.			
Diversified reports	Provides visualized and multi-dimensional report display by user, application, content, time, traffic, threat, or URL.			
Routing	Supports multiple types of routing protocols and features, such as RIP, OSPF, BGP, IS-IS, IPv6RD, and ACL6, in IPv4 and IPv6 environments.			
HA	Supports the active/active and active/standby working modes.			
Platform compatibility	Supports mainstream virtualization platforms, including VMware ESXi, Linux KVM, and Huawei FusionSphere.			
Software package format	Supports software packages in .vmdk, .iso, .qcow2, and .ovf formats for simple deployment.			